

Unfortunately, there is not a perfect detector for the entire infrared region. As a consequence, there are a number of factors to consider when choosing an infrared detector for your measurement, including

- Spectral range
- Sensitivity
- Cooling method
- Response speed

It is often not possible to optimize all the desired factors in a single detector; some compromises will be needed. For a detailed description of these factors, please refer to ["Characteristics and use of infrared detectors."](#)

Some of the more commonly used detectors at our beamline are listed below. For a complete listing of the available infrared detectors, please see our [detector list](#)

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Detector			
Spectral Range / cm	⁻¹		
Sensitivity (D*) / cm•Hz	^{1/2}	•W	⁻¹
Cooling			
Speed (Time constant) / s			
DTGS	10-11,000 (depends on window material)		
~2 x 10	8		
Room Temp			
~10	⁻²		
MCT A			
650-11,000	~2 x 10	10	
Liquid N	2	~10	⁻⁶
MCT B			

Which IR detector is the best?

400-11,000	$\sim 4 \times 10$	9	
Liquid N	2	~ 10	-6
Si Bolometer			
3-5000	$\sim 5 \times 10$	9	
Liquid He	~ 10	-3	

Our infrared microscopes (Beamlines [1.4.3](#) and [1.4.4](#)) are equipped with an MCT A detector because this detector provides the best sensitivity and speed over a broad spectral range covering the entire mid-infrared and most of the near-infrared (up to $\sim 11,000$ cm

-1

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